

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SE 2005/000376

## A. CLASSIFICATION OF SUBJECT MATTER

**IPC7: D21G 9/00, D21F 7/00**

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

**IPC7: D21G, D21F, B26D, F16C, B66C, B25K, E02F**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

**SE,DK,FI,NO classes as above**

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## WPI, EPO-INTERNAL, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|-----------|---|-----------------------|
| A         | US 4299533 A (MAKOTO OHNAKA), 10 November 1981<br>(10.11.1981), The whole document especially fig. 2 and 5<br>--          | 1-26                  |
| A         | WO 9011165 A1 (KLINTBERG, NICLAS), 4 October 1990<br>(04.10.1990), figure 1, claim 1<br>--                                | 1-26                  |
| A         | US 4396344 A (KOICHI SUGIMOTO ET AL),<br>2 August 1983 (02.08.1983), column 3,<br>line 1 - line 47, figures 3,5,6,7<br>-- | 1-26                  |
| A         | EP 0118845 A1 (SCHLIMM, NORBERT), 19 Sept 1984<br>(19.09.1984), figure 1, claims<br>--                                    | 1-26                  |

 Further documents are listed in the continuation of Box C. See patent family annex.

- \* Special categories of cited documents
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
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- "O" document referring to an oral disclosure, use, exhibition or other means
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- "&" document member of the same patent family

| Date of the actual completion of the international search  | Date of mailing of the international search report                       |
|--|--|
| 30 May 2005  | 14-06-2005   |
| Name and mailing address of the ISA/<br>Swedish Patent Office<br>Box 5055, S-102 42 STOCKHOLM<br>Facsimile No. +46 8 666 02 85 | Authorized officer<br>Erika Westberg/MP<br>Telephone No. +46 8 782 25 00 |

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|-----------|---|-----------------------|
| A         | CA 2419660 A1 (METSO PAPER KARLSTAD AB),<br>25 April 2002 (25.04.2002), page 1,<br>line 15 - page 2, line 7; page 5, line 4 - page 7,<br>line 11, figures 2,3<br>-- | 1-26                  |
| A         | US 5762759 A (GREGORY L. WEDEL), 9 June 1998<br>(09.06.1998), column 2, line 35 - line 55;<br>column 4, line 5 - line 22, figure 3<br>--                            | 1-26                  |
| A         | GB 2189227 A (OY TAMPELLA AB), 21 October 1987<br>(21.10.1987), figure 2<br>--<br>-----   | 1-26                  |

**INTERNATIONAL SEARCH REPORT**  
 Information on patent family members

30/04/2005

 International application No.  
 PCT/SE 2005/000376

|    |         |    |            |    |               |            |
|----|---------|----|------------|----|---------------|------------|
| US | 4299533 | A  | 10/11/1981 | AU | 509159 A,B    | 24/04/1980 |
|    |         |    |            | CA | 1074353 A     | 25/03/1980 |
|    |         |    |            | DE | 2842456 A     | 20/12/1979 |
|    |         |    |            | FR | 2427884 A     | 04/01/1980 |
|    |         |    |            | GB | 2022046 A,B   | 12/12/1979 |
|    |         |    |            | IT | 1101358 B     | 28/09/1985 |
|    |         |    |            | IT | 7823457 V     | 04/12/1978 |
|    |         |    |            | IT | 7830514 D     | 00/00/0000 |
|    |         |    |            | JP | 54159964 A    | 18/12/1979 |
|    |         |    |            | JP | 54168623 U    | 28/11/1979 |
|    |         |    |            | SE | 7810565 A     | 07/12/1979 |
| WO | 9011165 | A1 | 04/10/1990 | DE | 69019963 D,T  | 22/02/1996 |
|    |         |    |            | EP | 0464129 A,B   | 08/01/1992 |
|    |         |    |            | SE | 502256 C      | 25/09/1995 |
|    |         |    |            | SE | 8901019 A     | 23/09/1990 |
| US | 4396344 | A  | 02/08/1983 | DE | 3038419 A,C   | 30/04/1981 |
|    |         |    |            | FR | 2467060 A,B   | 17/04/1981 |
|    |         |    |            | GB | 2061872 A,B   | 20/05/1981 |
|    |         |    |            | GB | 2125767 A,B   | 14/03/1984 |
|    |         |    |            | GB | 8300429 D     | 00/00/0000 |
|    |         |    |            | GB | 8305700 D     | 00/00/0000 |
|    |         |    |            | JP | 1473457 C     | 27/12/1988 |
|    |         |    |            | JP | 56051113 U    | 07/05/1981 |
|    |         |    |            | JP | 56056395 A    | 18/05/1981 |
|    |         |    |            | JP | 63012752 B    | 22/03/1988 |
| EP | 0118845 | A1 | 19/09/1984 | DE | 3308474 A     | 13/09/1984 |
|    |         |    |            | AT | 28048 T       | 15/07/1987 |
|    |         |    |            | DE | 3308475 A     | 13/09/1984 |
|    |         |    |            | JP | 59169785 A    | 25/09/1984 |
| CA | 2419660 | A1 | 25/04/2002 | BR | 0114211 A     | 21/10/2003 |
|    |         |    |            | EP | 1332257 A     | 06/08/2003 |
|    |         |    |            | SE | 517431 C      | 04/06/2002 |
|    |         |    |            | SE | 0003773 A     | 20/04/2002 |
|    |         |    |            | US | 20040069107 A | 15/04/2004 |
|    |         |    |            | WO | 0233169 A     | 25/04/2002 |
|    |         |    |            | EP | 1483937 A     | 08/12/2004 |
|    |         |    |            | SE | 523100 C      | 30/03/2004 |
|    |         |    |            | SE | 0102208 A     | 22/12/2002 |
|    |         |    |            | US | 20040234091 A | 25/11/2004 |
|    |         |    |            | WO | 03001846 A    | 03/01/2003 |
| US | 5762759 | A  | 09/06/1998 | WO | 9832919 A     | 30/07/1998 |
| GB | 2189227 | A  | 21/10/1987 | CA | 1280394 A,C   | 19/02/1991 |
|    |         |    |            | DE | 3712351 A,C   | 22/10/1987 |
|    |         |    |            | FI | 74315 B,C     | 30/09/1987 |
|    |         |    |            | FI | 861649 D      | 00/00/0000 |
|    |         |    |            | GB | 8706682 D     | 00/00/0000 |
|    |         |    |            | SE | 466316 B,C    | 27/01/1992 |
|    |         |    |            | SE | 8701191 A     | 19/10/1987 |
|    |         |    |            | US | 4818343 A     | 04/04/1989 |

1/3

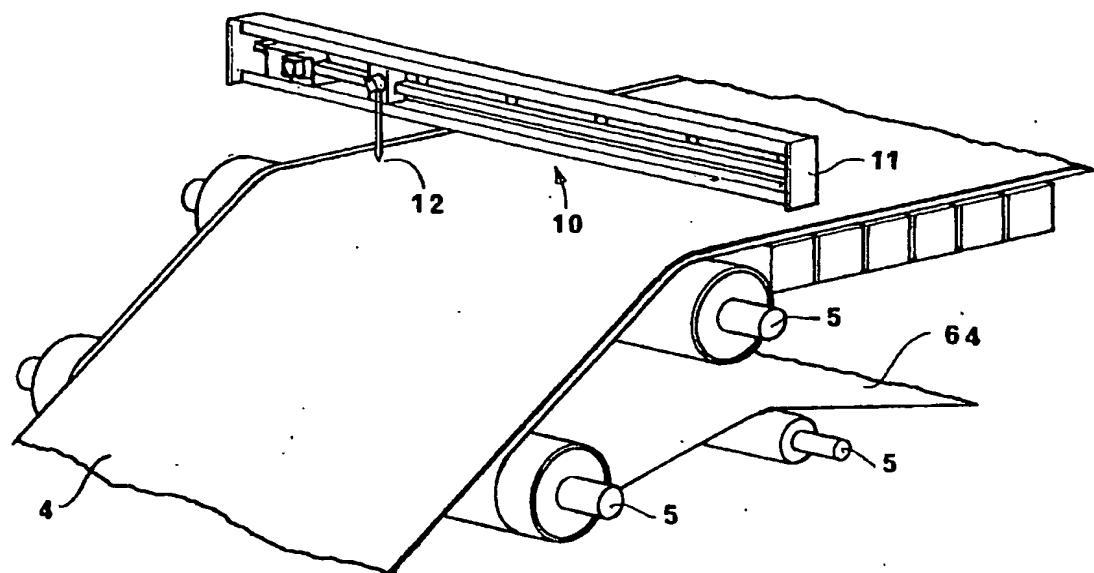


FIG 1

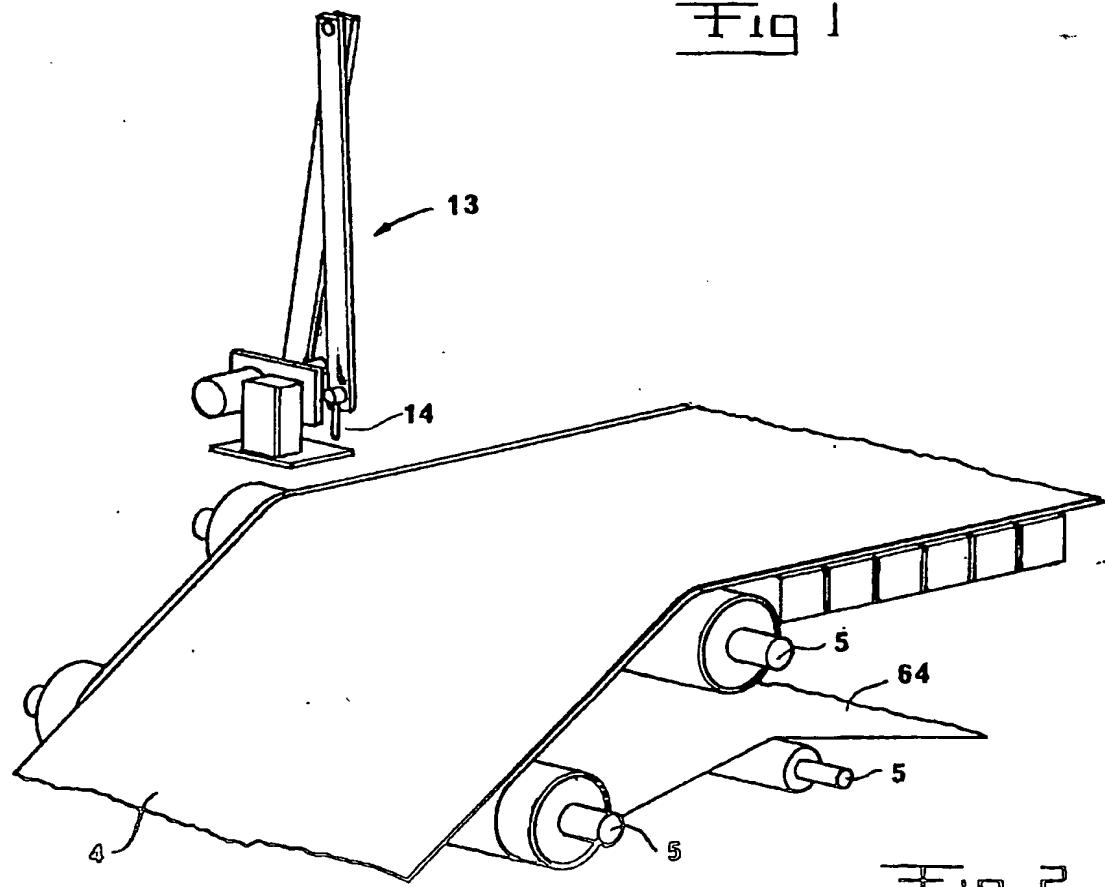
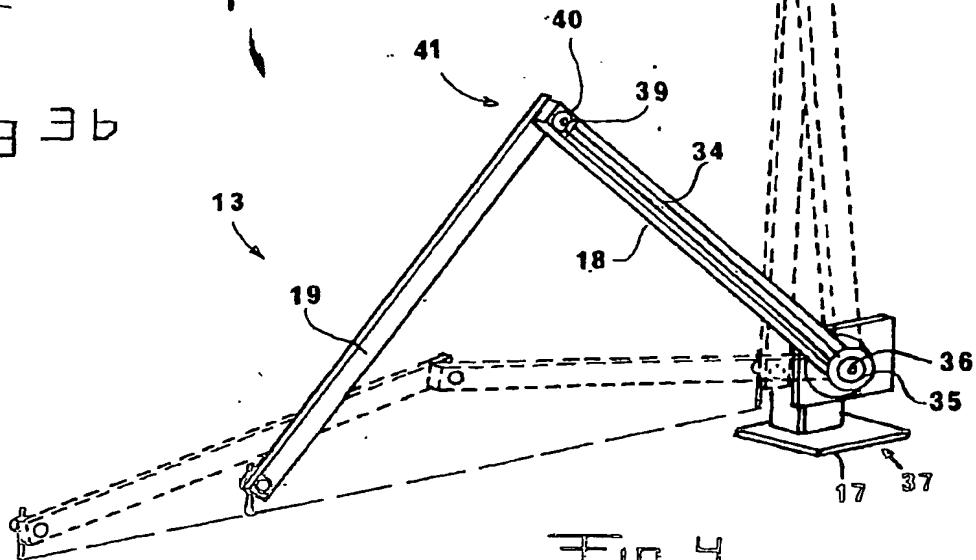
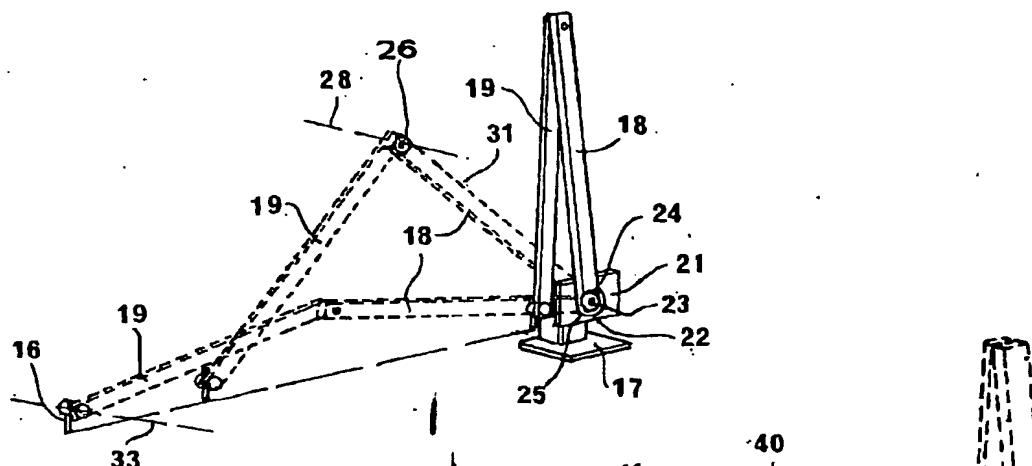
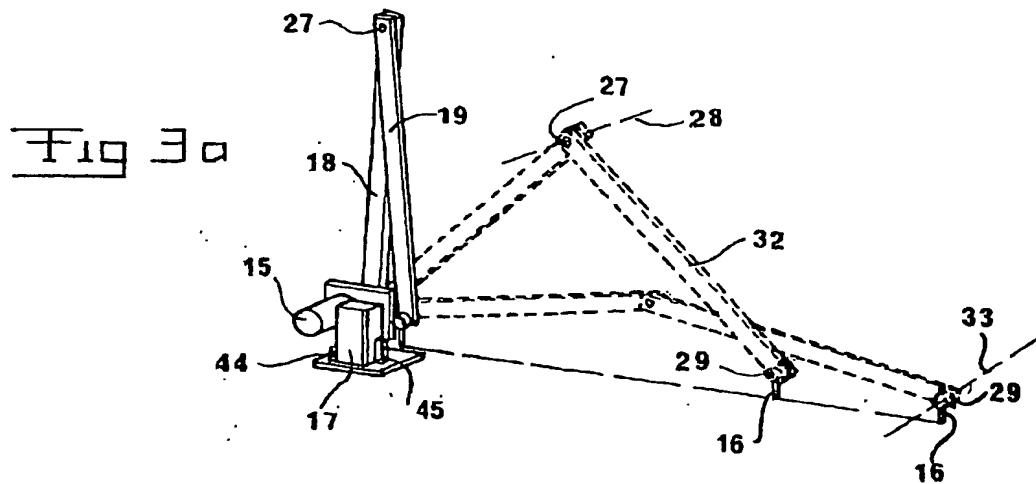


FIG 2

2/3



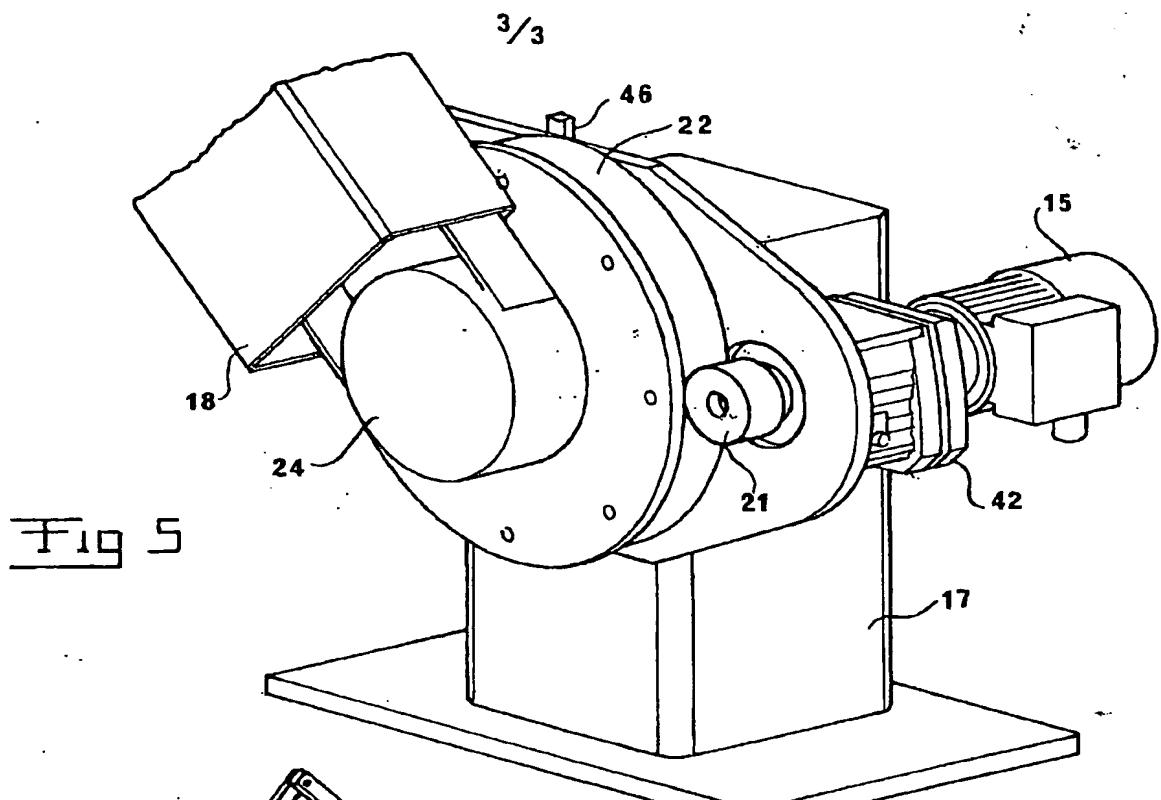


Fig. 5

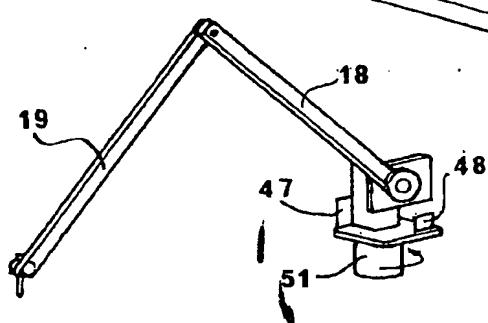


Fig. 6

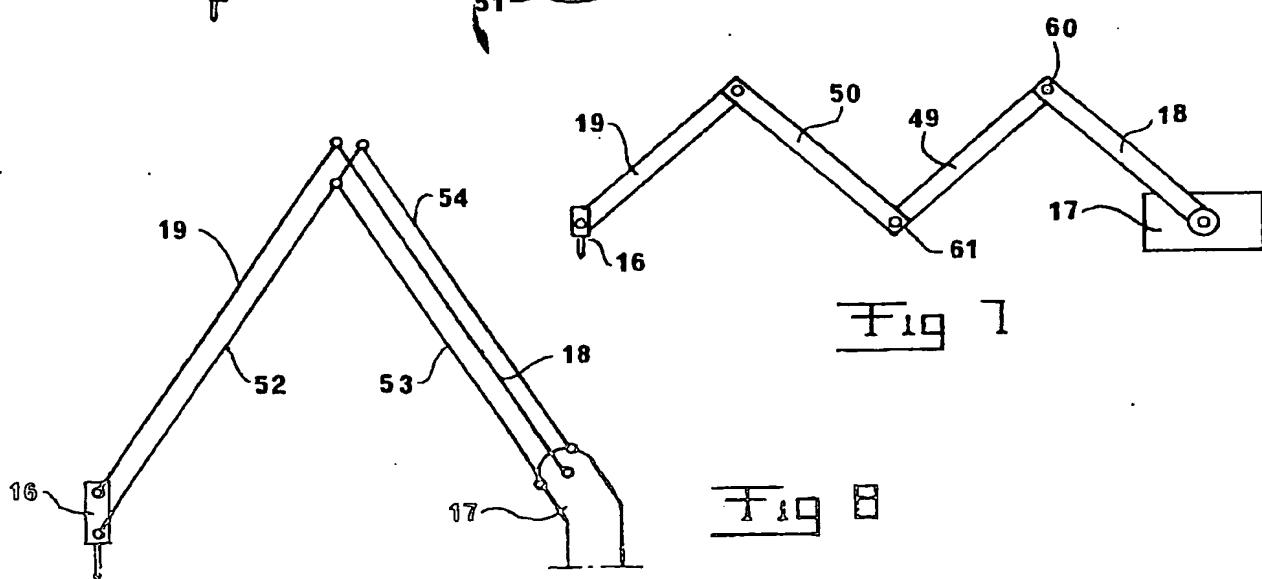


Fig. 7

Fig. 8

